



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
26.06.2002 Bulletin 2002/26

(51) Int Cl.7: **B05C 19/04, B05C 19/06**

(43) Date of publication A2:
25.10.2000 Bulletin 2000/43

(21) Application number: **00650038.3**

(22) Date of filing: **20.04.2000**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
 Designated Extension States:
AL LT LV MK RO SI

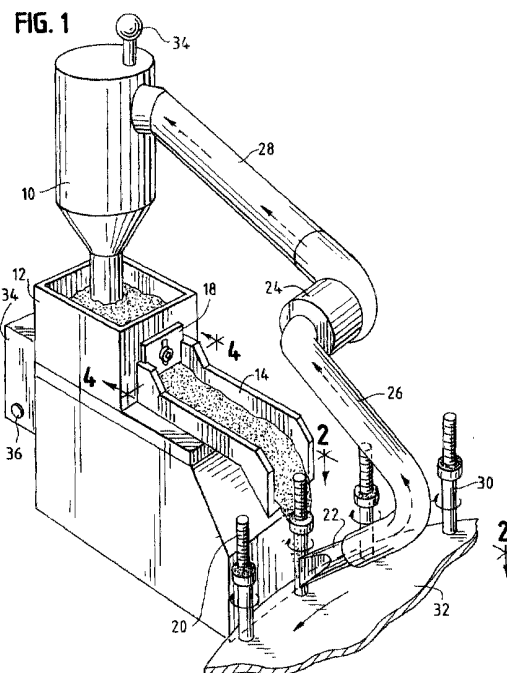
(72) Inventors:
 • **Dimaio, Anthony**
Haverhill MA 01832 (US)
 • **Arslanouk, Mahmoud**
Haledon, NJ 07508 (US)

(30) Priority: **23.04.1999 US 298124**

(74) Representative: **Casey, Lindsay Joseph et al**
F. R. Kelly & Co.
27 Clyde Road
Ballsbridge
Dublin 4 (IE)

(54) **Powder feed apparatus and process for the application of a thermoplastic resin onto a fastener**

(57) An apparatus and method for use with powdered resin feeders provides a continuous stream of powder to a plurality of threaded or non-threaded fasteners (20). In one preferred embodiment, the apparatus generates a gravity induced powder stream at the free end of a discharge conduit (14) which is intersected by a series of fasteners (20) carried on a conveyor (32). A vacuum nozzle (22) is positioned adjacent to the powder stream and the conveyor (32). Both the vacuum nozzle (22) and the free end of the discharge conduit (14) are adjustably positionable relative to the path of the fasteners (20) carried on the conveyor (32).





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 65 0038

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y, D	US 5 836 721 A (WALLACE JOHN S) 17 November 1998 (1998-11-17)	1-7	B05C19/04 B05C19/06
A	* column 5, line 34 - line 37 * * column 6, line 37 - column 7, line 16; figures * ---	8	
Y	EP 0 501 264 A (AXIS SPA) 2 September 1992 (1992-09-02)	1-7	
A	* column 13, line 37 - column 14, line 22 * * column 16, line 2 - line 25; figures 2, 6 * ---	8, 9	
A	US 4 656 051 A (WOJCIK PAUL E) 7 April 1987 (1987-04-07) * column 5, line 41 - column 6, line 25; figures *	1, 5, 6, 8	
A	US 4 842 890 A (SESSA EUGENE D ET AL) 27 June 1989 (1989-06-27) * column 6, line 32 - line 41 * * column 7, line 14 - line 26 * * column 7, line 48 - line 65; figures *	1, 5, 7-9	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B05C
A	WO 98 30339 A (NYLOK FASTENER CORP) 16 July 1998 (1998-07-16) * page 1, paragraph 2 * * page 9 * * page 11, last paragraph; figures * -----	1, 5, 8	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 May 2002	Examiner Brévier, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 (3.02) (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 65 0038

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-05-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5836721 A	17-11-1998	US 5656325 A	12-08-1997
		US 5964551 A	12-10-1999
		US 6322628 B1	27-11-2001
		BR 9508486 A	25-11-1997
		CA 2194059 A1	15-02-1996
		EP 0773838 A1	21-05-1997
		WO 9604082 A1	15-02-1996
EP 0501264 A	02-09-1992	US 5179910 A	19-01-1993
		DE 69226385 D1	03-09-1998
		EP 0501264 A2	02-09-1992
		JP 6178513 A	24-06-1994
		US 5540776 A	30-07-1996
US 4656051 A	07-04-1987	NONE	
US 4842890 A	27-06-1989	AU 2128888 A	30-01-1989
		CA 1296954 A1	10-03-1992
		DE 3854527 D1	02-11-1995
		DE 3854527 T2	22-02-1996
		EP 0354216 A1	14-02-1990
		ES 2009961 A6	16-10-1989
		IL 86946 A	14-01-1993
		MX 167379 B	19-03-1993
		WO 8900087 A1	12-01-1989
		US 5025750 A	25-06-1991
WO 9830339 A	16-07-1998	US 6004627 A	21-12-1999
		AU 722584 B2	10-08-2000
		AU 5815298 A	03-08-1998
		BR 9807283 A	21-03-2000
		CN 1248184 T	22-03-2000
		EP 1015132 A1	05-07-2000
		JP 2001508356 T	26-06-2001
		TW 410174 B	01-11-2000
		WO 9830339 A1	16-07-1998